

REMARKS

Applicants amended the renumbered claims to adjust the claims from which they depend when the claims from which they depend are effected by the renumbering. Applicants further changed the claim term “worker” to “work process” in certain claims.

The Examiner rejected claims 1-36 as anticipated (35 U.S.C. §102(e)) by Flores (U.S. Patent No. 6,058,413). Applicants traverse these rejections for the following reasons. In discussing the claims, Applicants will refer to the renumbered claims.

Claims 1, 13, and 25 concern processing a job. These claims require generating a signal when status for the job is changed from a first status to a second status and notifying a work process associated with the second status that one job had its status changed to the second status in response to the signal. The work process processes the job that had its status changed from the first status to the second status and modifies the status of the job after completing the processing of the job.

The cited col. 1, lines 41-42 mentions that a workflow management system notifies a user of a step to begin or complete. (Office Action, pgs. 3, 9, 15-16) However, this cited section nowhere discloses the claim requirements that a work process is associated with a second status and notifying such associated work process that a job had its status changed from a first to second status.

The cited col. 14, lines 19-26 mentions that an STF processor polls a workflow processor for any notification events and calls Server APIs to get the workflow status and sends workflow information to the participant. This cited section only mentions alerting a participant if there is a “notification event”. Nowhere does this cited section disclose that the “notification event” is one job having its status changed from a first status to a second status. Further, nowhere does this cited section disclose the claim requirement of notifying a work process associated with the second status of the change in status. Nowhere does the cited Flores disclose that the notified participant is associated with a second status, where a job had its status changed from a first status to a second status.

The Examiner found that col. 8, lines 31-35 of Flores discloses the claim requirement of the work process modifying the status of the job after completing the processing of the job. (Office Action, pgs. 4, 10, 16) Applicants traverse.

The cited col. 8, lines 31-35 of Flores mentions that a workflow server responds to transactions and updates the workflow and places status information in the STF database to be processed by STF processors. Previously, the Examiner had likened the “participants” of Flores with the claimed work process that processes the job. The cited col. 8 mentions that the workflow server sets status information. Nowhere does the cited Flores disclose that the work process that processes the job modifies the status of the job after completing the processing of the job. Instead, the cited Flores mentions that one component, the “participants”, processes the job, and another component, the workflow server, places the status information. Nowhere does the cited Flores disclose that the “participants” modify the job status after completing the processing of a job. Instead, the cited Flores teaches away from this claim requirement because the cited Flores mentions that another cited component, the “workflow server”, sets the status.

For these reasons, Applicants submit that claims 1, 13, and 25 are patentable over the cited Flores because Flores does not disclose all the claim requirements.

Applicants submit that claims 2-12, 14-24, and 26-36 are patentable over the cited Flores because they depend from claims 1, 13, and 25, which are patentable over the cited art for the reasons discussed above. Claims 2, 3, 5, 8, 9, 14, 15, 17, 20, 21, 26, 27, 29, 32, and 33 provide additional grounds of patentability over the cited art.

Claims 2, 14, and 26 depend from claims 1, 13, and 25 and further require that the signal is transmitted to a routing process and indicates the second status. The routing process processes a mapping associating each status with one work process in response to receiving the signal and determines from the mapping one work process associated with the second status, wherein the determined work process is notified of the job.

The Examiner cited col. 5, lines 26-28 of Flores as disclosing the claim requirement that a router process a mapping associating each status with one work process in response to receiving the signal indicating the second status, or change of status. (Office Action, pg. 4, 10-11, 17)

This cited col. 5 mentions a business process map providing a graphical representation of a business process showing workflows and their relationships. Applicants submit that this cited col. 5 only mentions broadly the concept of a workflow. Nowhere does this cited section anywhere disclose the claim requirement of a mapping associating each status with one work process and processing this mapping in response to receiving a signal indicating a change in status to the second status.

The Examiner cited col. 3, lines 62-67, col. 4, lines 1-11 and col. 5, lines 26-28 of Flores as disclosing the claim requirement of determining from the mapping one work process associated with the second status, wherein the determined work process is notified of the job. (Office Action, pg. 4, 10-11, 17). Applicants traverse.

The cited col. 3, lines 62-67 mentions that a workflow system utilizes a definitions database containing records of definitions of the organization, business, processes workflows, roles and acts and a transactions database containing records of enactments of workflows. The cited col. 4, lines 1-11 mentions a names database containing records of roles and identities of organization, a schedule database having date and time when a business process must be initiated, an administration database storing information needed by the workflow server to operate, and an STF queue database storing records of notifications to be sent to users.

Nowhere does the cited cols. 3, 4, and 5 of Flores disclose the claim requirement of determining from the mapping associating each status with one work process the work process associated with the second status. The cited Flores discusses workflow components in general, but nowhere anywhere discloses or mentions this claim requirement. The cited Flores does mention that the database stores records of notifications sent to users (col., 4, lines 9-11). However, this cited section too nowhere discloses processing the mapping as claimed to determine a work process associated with a new status.

Accordingly, claims 2, 14, and 26 provide additional grounds of patentability over the cited art because the cited Flores does not disclose the additional requirements of these claims.

Claims 3, 15, and 27 depend from claims 1, 13, and 25 and further require that the job status is maintained in a database table including information on the job. The work process

maintains a connection with the database that enables communication with the database table. Modifying the status of the job after completing processing comprises updating the status of the job to an output status associated with another work process, and wherein updating the status with the output status generates the signal indicating a change in status.

The Examiner cited col. 8, lines 31-60 and col. 10, lines 11-18 of Flores as disclosing the additional requirements of claims 3, 15, and 27 (Office Action, pgs. 4-5, 11, 17). The cited col. 8, lines 31-60 discusses how a workflow server updates the workflow and places status information in the STF queue. This cited section discusses STF transactions defined in an STF format, and that an application can use STF to interface with a workflow server, and how STF transactions are passed from the STF processor to the workflow server. STF transactions include initiating and acting a workflow, as well as requesting the status of the workflow.

Nowhere does the cited discussion in Flores on the STF format disclose or anywhere suggest the claim requirement that a work process modify a job status to an output status associated with another work process. The cited col. 8 of Flores mentions requesting the status, but nowhere discloses modifying the status to an output status associated with another work process.

The cited col. 10, lines 11-18 mentions API functions such as getting workflow status, and that the STF transaction facilitates invocations of the API functions and to return status. Again, nowhere does this cited section disclose the claim requirement that a work process modify the job status to an output status associated with another work process.

Accordingly, claims 3, 15, and 27 provide additional grounds of patentability over the cited art because the cited Flores does not disclose the additional requirements of these claims.

Claims 5, 17, and 29 depend from claims 4, 16, and 28 and further require that here are multiple work processes each associated with one input status and at least one output status, wherein each work process is enabled to update the job status with one associated output status after completing the processing of the job. The output status for one work process is the input status associated with one other work process and the definition of input and output statuses for work processes defines the workflow of the job.

The Examiner cited col. 8, lines 31-60, FIG. 5, and col. 14, lines 18-25 of Flores as disclosing the requirements of claims 5, 17, and 29. (Office Action, pgs. 5-6, 12, 18).

Applicants traverse.

The cited FIG. 5 shows the exchange of transactions between a workflow application, the STF processor and the server. Nowhere does the cited FIG. 5 disclose the claim requirement that each work process updates the job status with one output status, and that the output status for one work process is the input status for another work process. Nowhere does FIG. 5 of Flores disclose that the output status for one workflow application is the input status for another.

The cited col. 8, lines 31-60 discusses the STF format, how the workflow server places the status, and one STF transaction that requests status of a workflow. The cited col. 14, lines 18-25 of Flores mentions that an STF processor may poll the workflow processor for notification events, and if there is notification, an API is called to get the workflow status and send workflow information to a participant. Nowhere do these cited sections of Flores disclose or anywhere mention the claim requirement that each work process updates the job status with one output status, and that the output status for one work process is the input status for another work process.

Accordingly, claims 5, 17, and 29 provide additional grounds of patentability over the cited art because the cited Flores does not disclose the additional requirements of these claims.

Claims 8, 20, and 32 depend from claims 3, 15, and 27, respectively, and further require that the work process further performs querying the database table for jobs having the status associated with the work process; processing the job having the status associated with the work process; terminating processing of the database table if there are no further jobs in the database table having the status associated with the work process; and querying the database table for jobs after receiving the notification.

The Examiner found that FIG. 5 and col. 8, line 57 disclose the claim requirement of querying the database table for jobs having the status associated with the work process. (Office Action, pgs. 7, 13, 19-20) The cited FIG. 5 shows workflow transactions and the cited col. 8, line 47 mentions that on STF transaction, such as those shown in FIG. 5, requests the status of a

workflow. However, the claims require that a work process query the database table for jobs having a status associated with that work process. Nowhere does the cited Flores disclose or anywhere suggest that the work process associated with the status processes a database table for all jobs having such status.

The Examiner cited col. 8, lines 54-56 of Flores as disclosing the requirement that the work process processes the job having the status associated with the work process. The cited col. 8 mentions STF transactions of initiating a work flow, acting in a workflow, and requesting status. Although the cited Flores mentions workflow operations, nowhere does the cited Flores disclose that the work process processes jobs having status associated with the work process.

The Examiner cited col. 15, lines 5-17 of Flores as disclosing the claim requirement of terminating processing of the database table if there are no further jobs in the database table having the status associated with the work process. The cited col. 15 mentions field values in the STF transactions communicated from the workflow application (WEA) to the STF processor, and that one field is a terminator. Although the cited Flores discusses termination in the context of workflow transactions, nowhere does the cited Flores disclose or anywhere suggest that the work process terminate processing the database table if there are no further jobs in the database table having the status associated with the work process. Nowhere does the cited Flores disclose the conditions for terminations expressed in the claim limitations.

Accordingly, claims 8, 20, and 32 provide additional grounds of patentability over the cited art because the cited Flores does not disclose the additional requirements of these claims.

Claims 9, 21, and 33 depend from claims 8, 20, and 32 and further require that the work process spawns a work thread to process one job in the database table having the status associated with the work process, wherein the work process is capable of spawning multiple work threads to process different jobs having the status associated with the work process.

The Examiner cited col. 8, lines 31-69 and col. 10, lines 16-21 as disclosing the additional requirements of claims 9, 21, and 33. (Office Action, pgs. 8, 14, 20) The cited col. 8 mentions various workflow transactions and col. 10 mentions an STF transaction set to invoke the workflow functions and return status. Nowhere do these cited sections of Flores anywhere

disclose a work process spawning threads to process different jobs in the database tables having the status of the work process as claimed.

Accordingly, claims 9, 21, and 33 provide additional grounds of patentability over the cited art because the cited Flores does not disclose the additional requirements of these claims.

Conclusion

For all the above reasons, Applicant submits that the pending claims 1-36 are patentable over the art of record. Applicants have not added any claims. Nonetheless, should any additional fees be required, please charge Deposit Account No. 50-0585.

The attorney of record invites the Examiner to contact him at (310) 553-7977 if the Examiner believes such contact would advance the prosecution of the case.

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Claims 5, 7, 11, 17, 19, 21, 23, 26-36 are amended as follows:

5. (Amended) The method of claim 3, wherein there are multiple work processes each associated with one input status and at least one output status, wherein each [worker] work process is enabled to update the job status with one associated output status after completing the processing of the job, wherein the output status for one [worker] work process is the input status associated with one other [worker] work process, and wherein the definition of input and output statuses for [workers] work processes, defines the workflow of the job.

7. (Amended) The method of claim 6, wherein an error [worker] work process is associated with the error status, wherein updating the job to the error status causes the notification of the error [worker] work process, further comprising the error [worker] work process performing:

performing error recovery operations on the job;  
determining whether the error recovery operations corrected the job; and  
setting the jobs status of the corrected job to a first possible status in the workflow.

11. (Amended) The method of claim 10, wherein at least two [workers] work processes process the job at different devices in communication over a network, further comprising accessing the job from another device over the network to process the job at the device on which that [worker] work process executes.

17. (Amended) The system of claim 15, wherein there are multiple work processes each associated with one input status and at least one output status, wherein each [worker] work process is enabled to update the job status with one associated output status after completing the processing of the job, wherein the output status for one [worker] work process is the input status

associated with one other [worker] work process, and wherein the definition of input and output statuses for [workers] work processes defines the workflow of the job.

19. (Amended) The system of claim [17] 18, wherein an error [worker] work process is associated with the error status, wherein updating the job to the error status causes the notification of the error [worker] work process, further comprising:

means for performing error recovery operations on the job;

means for determining whether the error recovery operations corrected the job; and

means for setting the jobs status of the corrected job to a first possible status in the workflow.

21. (Amended) The system of claim [19] 20, wherein the work process spawns a work thread to process one job in the database table having the status associated with the work process, and wherein the work process is capable of spawning multiple work threads to process different jobs having the status associated with the work process.

23. (Amended) The system of claim [21] 22, wherein at least two [workers] work processes process the job at different devices in communication over a network, further comprising means for accessing the job from another device over the network to process the job at the device on which that [worker] work process executes.

26. (Amended) The article of manufacture of claim [24] 25, wherein the signal is transmitted to a routing process and indicates the second status, further comprising:

processing with the routing process a mapping associating each status with one work process in response to receiving the signal; and

determining from the mapping one work process associated with the second status, wherein the determined work process is notified of the job.

27. (Amended) The article of manufacture of claim [24] 25, wherein job status is maintained in a database table including information on the job, further comprising maintaining, with the work process, a connection with the database that enables communication with the database table, wherein modifying the status of the job after completing processing comprises updating the status of the job to an output status associated with another work process, and wherein updating the status with the output status generates the signal indicating a change in status.

28. (Amended) The article of manufacture of claim [26] 27, wherein the signal is generated by an event trigger in the database that responds to an update to the status of the job in the database table.

29. (Amended) The article of manufacture of claim [26] 27, wherein there are multiple work processes each associated with one input status and at least one output status, wherein each [worker] work process is enabled to update the job status with one associated output status after completing the processing of the job, wherein the output status for one [worker] work process is the input status associated with one other [worker] work process, and wherein the definition of input and output statuses for [workers] work processes defines the workflow of the job.

30. (Amended) The article of manufacture of claim [26] 27, further comprising the work process performing:

determining whether the work process completed processing the job successfully; and  
style="padding-left: 40px;">updating the status of the job to an error status if the work process did not complete processing the job successfully, wherein the status of the job is updated with one output status associated with the work process if the job work process completed processing the job successfully.

31. (Amended) The article of manufacture of claim [29] 30, wherein one [worker] work process is an error [worker] work process is associated with the error status, wherein updating the job to the error status causes the notification of the error [worker] work process, further comprising the error [worker] work process performing:

performing error recovery operations on the job;  
determining whether the error recovery operations corrected the job; and  
setting the jobs status of the corrected job to a first possible status in the workflow.

32. (Amended) The article of manufacture of claim [26] 27, wherein the work process further performs:

querying the database table for jobs having the status associated with the work process;  
processing the job having the status associated with the work process;  
terminating processing of the database table if there are no further jobs in the database table having the status associated with the work process; and  
querying the database table for jobs after receiving the notification.

33. (Amended) The article of manufacture of claim [31] 32, wherein the work process spawns a work thread to process one job in the database table having the status associated with the work process, wherein the work process is capable of spawning multiple work threads to process different jobs having the status associated with the work process.

34. (Amended) The article of manufacture of claim 25, wherein the job comprises a data file, wherein at least one work process processes the data file to alter its format and at least one other work process processes the data file in the altered format to transmit the work process to an output device.

35. (Amended) The article of manufacture of claim [33] 34, wherein at least two [workers] work processes process the job at different devices in communication over a network,

further comprising accessing the job from another device over the network to process the job at the device on which that [worker] work processes executes.

36. (Amended) The article of manufacture of claim [24] 25, further comprising:  
adding a status update to a list providing status updates for each job; and  
using the list to determine how the job has been processed by the work processes.